



## Acute impacts of extreme temperature exposure on emergency room admissions related to mental and behavior disorders in Toronto, Canada

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### Abstract:

**Background** The purpose of this study was to assess the effects of extreme ambient temperature on hospital emergency room visits (ER) related to mental and behavioral illnesses in Toronto, Canada. **Methods** A time series study was conducted using health and climatic data from 2002 to 2010 in Toronto, Canada. Relative risks (RRs) for increases in emergency room (ER) visits were estimated for specific mental and behavioral diseases (MBD) after exposure to hot and cold temperatures while using the 50th percentile of the daily mean temperature as reference. Poisson regression models using a distributed lag non-linear model (DLNM) were used. We adjusted for the effects of seasonality, humidity, day-of-the-week and outdoor air pollutants. **Results** We found a strong association between MBD ER visits and mean daily temperature at 28 C. The association was strongest within a period of 0-4 days for exposure to hot temperatures. A 29% (RREuro Surveillance (Bulletin European Sur Les Maladies Transmissibles; European Communicable Disease Bulletin)1.29, 95% CI 1.09-1.53) increase in MBD ER visits was observed over a cumulative period of 7 days after exposure to high ambient temperature (99th percentile vs. 50th percentile). Similar associations were reported for schizophrenia, mood, and neurotic disorders. No significant associations with cold temperatures were reported. **Limitations** The ecological nature and the fact that only one city was investigated. **Conclusions** Our findings suggest that extreme temperature poses a risk to the health and wellbeing for individuals with mental and behavior illnesses. Patient management and education may need to be improved as extreme temperatures may become more prevalent with climate change.

**Source:** <http://dx.doi.org/10.1016/j.jad.2013.10.042>

### Resource Description

#### Communication: ☒

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

#### Communication Audience: ☒

audience to whom the resource is directed

Health Professional

#### Exposure : ☒

# Climate Change and Human Health Literature Portal

weather or climate related pathway by which climate change affects health

Meteorological Factors, Temperature

**Temperature:** Extreme Cold, Extreme Heat

**Geographic Feature:** 

resource focuses on specific type of geography

None or Unspecified

**Geographic Location:** 

resource focuses on specific location

Non-United States

**Non-United States:** Non-U.S. North America

**Health Impact:** 

specification of health effect or disease related to climate change exposure

Mental Health/Stress

**Mental Health Effect/Stress:** Mood Disorder, Schizophrenia/Delusional Disorder, Stress Disorder, Substance-Induced Disorder

**Mitigation/Adaptation:** 

mitigation or adaptation strategy is a focus of resource

Adaptation

**Population of Concern:** A focus of content

**Population of Concern:** 

populations at particular risk or vulnerability to climate change impacts

Low Socioeconomic Status

**Resource Type:** 

format or standard characteristic of resource

Research Article

**Timescale:** 

time period studied

Time Scale Unspecified

**Vulnerability/Impact Assessment:** 

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content